

2. Consistency with NIPC Forecasts

As the I-355 Extension Study progressed, NIPC completed the refinement of its DRAM/EMPAL Model. As a test of the model's abilities, NIPC conducted a parallel analysis of the I-355 Extension. The results of NIPC's study were remarkably similar to those of ACG. After discussions with NIPC and IDOT, it was decided to use the NIPC results, in their entirety. However, since NIPC's model refinements have been completed only for the Existing Airports Scenario, ACG's completed forecasts for the South Suburban Airport Scenario were used. They are very similar. However, the South Suburban Airport Scenario does create a larger impact on population in Will County.

Following the completion of the above forecasts, by the 317 NIPC planning zones, representatives from IDOT and the consultants formally presented their findings to NIPC and its Planning Committee for its review and comment. NIPC, in a letter dated July 15, 1999 (attached as an appendix), acknowledged the consultations and concurrence that had taken place between its staff and ACG. NIPC concluded its letter by stating:

"The Planning Committee of NIPC has reviewed the findings of the ACG regarding the I-355 extension and agrees that the analysis ACG used to determine the impacts is consistent with analysis used to produce the endorsed NIPC forecasts. The Committee further agrees that the range of results among the alternative forecasts used by the Illinois Department of Transportation for the supplemental environmental impact statement for the I-355 extension are logically explainable."

Following the NIPC review and comments, ACG disaggregated the planning zone forecasts to each of the more than 18,000 CATS subzones. During this process of disaggregation, ACG also generated the detailed corollary data required as input to the CATS trip generation model. In generating this detailed set of data ACG used, as its guideline, the NIPC disaggregation of the planning zonal data. Two sets of disaggregate data, one assuming the expansion of existing airports and the second assuming the development of the Chicago Third Airport in the South Suburbs, were prepared and submitted to CATS.

3. Study Conclusions

The major conclusion of the foregoing study is that the proposed I-355 Extension, alone, is responsible for a population increase, in its narrowly-defined corridor, of 5,038 to 6,058 persons, between 1990 and 2020, depending on whether the Existing Airports Scenario or the South Suburban Airports Scenario is examined. This is approximately 1.3 to 1.4 percent of the total forecasted "Baseline" transportation projects impacts. Adding the synergistic impacts of I-80, at 1,848 to 2,184 persons for the two

alternatives, the proposed I-355 Extension contributes 6,886 to 8,242 persons, or 1.8 to 1.9 percent, of the forecasted 1990 to 2020 population growth. However, even this modest growth within the corridors is countered by reductions elsewhere in the Project Study Area that equal 5,573 to 5,575 persons. Consequently, the net population impact within the Project Study Area is 1,311 to 2,669 persons, or 0.3 to 0.6 percent of the total forecasted population growth to 2020.

The job impacts of the I-355 extension, alone, are the same under both airport alternatives. The I-355 corridor attracts 1,155 jobs; the synergistic impact of I-80 is 41 jobs, for a total of 1,196 jobs. However, this job growth is counter-balanced by a reduction of 1,028 jobs throughout the remainder of the Project Study Area. Consequently, the net job impact is a meager 168; this is 0.1 percent of the total forecasted job growth for the period, 1990 to 2020.

However, both the population and job growth, under the EA Full Build/I-355 alternative, are more concentrated than under the No-Build; and the intersection between I-355 and I-80 attracts a high-density development. Also, both population and, particularly, jobs are attracted closer to existing development. Consequently, while the overall impact, within the Project Study Area, of both jobs and population is relatively insignificant, the benefit of the Proposed I-355 Extension is that it consolidates growth closer to existing urban development and at higher densities within the corridor, than the No-Build alternative.

G. Final NIPC Refinement of DRAM/EMPAL-Generated Forecasts

The standard forecasting process used by NIPC in generating its formally-adopted forecasts calls for detailed staff review of the model output, followed by review and comments by county and municipal planners. The model output forecasts are then refined or revised to reflect both these internal and external reviews. Time constraints did not allow NIPC to undertake all these reviews and revisions for the I-355 Extension impact forecasts. The NIPC forecasts utilized for determining the socio-economic and transportation impacts were the first outputs of the DRAM/EMPAL model in its initial test in disaggregating impacts.

Following the completion of the I-355 Extension model-generated forecasts, the NIPC staff undertook a comprehensive update of its regional forecasts as a formal step toward updating the 2020 Regional Transportation Plan (RTP). As part of this process, the NIPC staff reviewed its forecasts with local officials and planners and adjusted them accordingly. On May 18, 2000 the NIPC Planning Committee approved the use of these revised forecasts for transportation planning.

Concurrent with the update of its formal forecasts, the NIPC staff undertook a careful review of the model-generated forecasts for the I-355 Extension Study. The review and revisions were completed in May 2000 and concluded that revised

population and employment impacts of the I-355 Extension on the Study Area are 9 percent and 4 percent lower, respectively, than originally estimated by the DRAM/EMPAL model. During this phase of analysis, the NIPC staff also reviewed the outputs of its model on forecasts outside its I-355 Extension Study Area and adjusted the forecast for several zones in Northern Lake and McHenry Counties, increasing some and reducing others for no net change. The magnitude of the revisions and the reasons why they were undertaken are presented in Appendix B.

The NIPC staff concluded that its revisions are minor and within the margin of error of any long-range socio-economic forecast. Notwithstanding this conclusion, IDOT asked the CATS staff to review the NIPC revisions and to determine their impacts on the transportation model outputs. The CATS staff concluded that the impacts of these revisions would be minor and within the margin of error of its model. The CATS staff comments are attached as Appendix C.

II. Supplemental Analysis: Impact of Transportation on Urban Form and Job/Household Balance in the Chicago Six-County Region

A. Introduction

Subsequent to the completion of the socio-economic forecasts described in Section I, it was decided that additional analysis be undertaken to better explain and document why the forecasted population and employment impacts of the I-355 Extension were so limited; especially when compared with a similar analysis completed for the Extension of Illinois 53 into Lake County. A critical assumption of the initial analysis was that the I-355 Extension was very effective in delivering Study Area residents to jobs in the job-rich areas of South and Central DuPage County. This fact tended to forestall or substitute for the development of major employment concentrations within the I-355 Study Area, itself. However, a gradual development spillover seems inevitable.

For a number of years, ACG has been monitoring the changes in employment concentration in the Chicago Metropolitan Area and the relationship of employment to households or job/household balance. During the period of study (1960 to 1995), the area around O'Hare International Airport started to develop - first to rival, then to supplant, the Chicago Central Area as the region's major employment center. This development took 30-35 years to mature, but has created a region of two dominant centers. This duality in employment focus has created the overlay of a second network on the traditional and dominant radial transportation network; and has changed many regional travel patterns.

The result of a thriving and growing employment focus at O'Hare has been the creation of an increasingly large employment magnet that radiates outward along its highway corridors. This employment center has matured in Central DuPage County and has spread into Southern DuPage. The job abundance of this area is a major attraction to the residents and workers of the Study Area, even as it continues to grow and expand.

B. Methodology

ACG has analyzed the job/household balance, the distribution of urban land uses, and the availability of land for urban development within the six-county Northeastern Illinois planning area. These analyses have been undertaken in support of:

- Charting the growth and spread of major employment centers in the region.

- Better documentation of the impact of transportation facilities on the urban form of the Chicago Metropolitan Area.
- Supplementing the purpose and need of the I-355 southern extension.

Much of the analysis was facilitated by the preparation and review of regional land use maps (both for jobs/household and land uses) for key data points - 1970, 1980, 1990, 1995. These maps are shown at the center and the conclusion of the text. The first set of maps, depicting job/household balance and “excess jobs”, are based on data that ACG has been monitoring for many years. The second set of data, showing job/household balance and land uses, including developed open space, are smaller-scale (quarter-section) data only recently made available. Both data files are from NIPC. While the former data files show impact by NIPC planning zones (quarter township), the latter, smaller scale data (quarter-section) gives a clearer indication of the relationship between highway corridors and development.

C. Excess Jobs by NIPC Planning Zones (DEZ's)

Exhibit 16 shows the job/household balance in the region in 1995. The basic unit for determining this balance is the NIPC Dram Empal planning zone (DEZ). It is clear from this map that areas of excess jobs (more jobs than local labor) are concentrated in the Chicago Central Area, O'Hare Airport and its environs, the I-88 corridor, Schaumburg, and East-central Lake and North Cook Counties. The southern 40 percent of the region is predominantly an area of job deficit. Currently, the catalysts for major job generation do not exist in this area. One such catalyst may be provided, eventually, in the form of a supplemental airport. In the meantime, however, good access must be provided to connect its residents with existing jobs.

A few decades ago, areas of excess jobs were not as dispersed as they are now. Exhibits 17, 18, and 19 show the job/household balance for 1970, 1980 and 1990, respectively. In 1970, the concentrations of excess jobs were in the Chicago Central Area, and in the areas in the vicinity of O'Hare and Midway Airports. Job concentrations in other parts of the City of Chicago and in the satellite cities of Waukegan, Elgin, Aurora and Joliet provided balance to their respective households. In addition, the Joliet Arsenal and adjacent industrial areas provided more than 20,000 jobs for residents of Central Will County.

In the 1980's and 1990's O'Hare grew as both the most important airport in the nation and the site of choice for the jobs of the burgeoning service sector. Quick access to a major airport became one of the top three locational factors for businesses and industries across the nation. Meanwhile, those suburban areas to the south were able to attract residential development, but not jobs. Joliet Arsenal lost nearly half its jobs. By 1990, virtually all the region's excess jobs were located north of I-55.

The extension of I-355 south to I-80 will provide the residents of Joliet and adjacent townships with good access to the job centers of O'Hare, DuPage, and Northwest Cook Counties. The commuter rail to downtown Chicago will continue to provide good access to this central job concentration. However, recent job growth in the Chicago Central Area has been limited, but has accelerated in the past two years (an increase of only 1315 from 1991 to 1997; 20,589 from 1997 to 1999). This modest growth, coupled with job losses in areas west and south of the Central Area and the conversion of their industrial and commercial land into residential uses has decreased, significantly, the excess jobs in the center of the region. Between 1970 and 1995, the excess jobs in the area bounded by Western Avenue, on the West; the Stevenson Expressway, on the South; and North Avenue, on the North, decreased by more than 180,000; and these areas are now ones of job deficit. The post-1995 trend of massive conversion of older commercial and industrial land and buildings into very attractive residential communities is accelerating the erosion of the Central Area as a concentration of excess jobs. This is due almost equally to the import of residents as to the stagnation in job growth.

Exhibit 20 shows the 1970-1995 changes in excess jobs by DEZ. It is clear from this map that O'Hare has been a major catalyst for job development. It also is implied that the highways leading outward from O'Hare have provided the corridors for extending its economic benefits. That corridor development has matured in Lake, Northwest Cook and DuPage Counties.

D. Excess Jobs by Quarter-Section

At the metropolitan level, jobs and households are, by definition, in balance. As the zones get smaller, the household/job balance map approaches a generalized land use map differentiating residential land from work places. Exhibit 21 shows the 1995 household/job balances by quarter-section. The overall pattern of this map is not different from the one showing this relationship by DEZ. However, Exhibit 21 shows, in greater detail, the relationship between residential land and work place concentrations and the importance of highways in linking the two. Here, the conclusions reached in reading Exhibit 20 become even more explicit.

The extension of I-355 south to I-80 will provide easy and quick access for the residential (yellow) areas of Joliet and its environs to the existing job concentrations. Those concentrations that are readily accessible lie along I-88, the intersection of I-355 and the Northwest Tollroad, and along North Avenue and Irving Park Road in DuPage County.

Exhibit 22 shows the 1970 household/job balance by quarter-section. This map shows that, in 1970, the area within 20 miles of downtown Chicago was completely urbanized. It also shows that the key highways to/from the downtown were job rich. The rest of the region was, basically, both balanced and concentric. The only minor

Exhibit 16 : Job/Household Balance - 1995

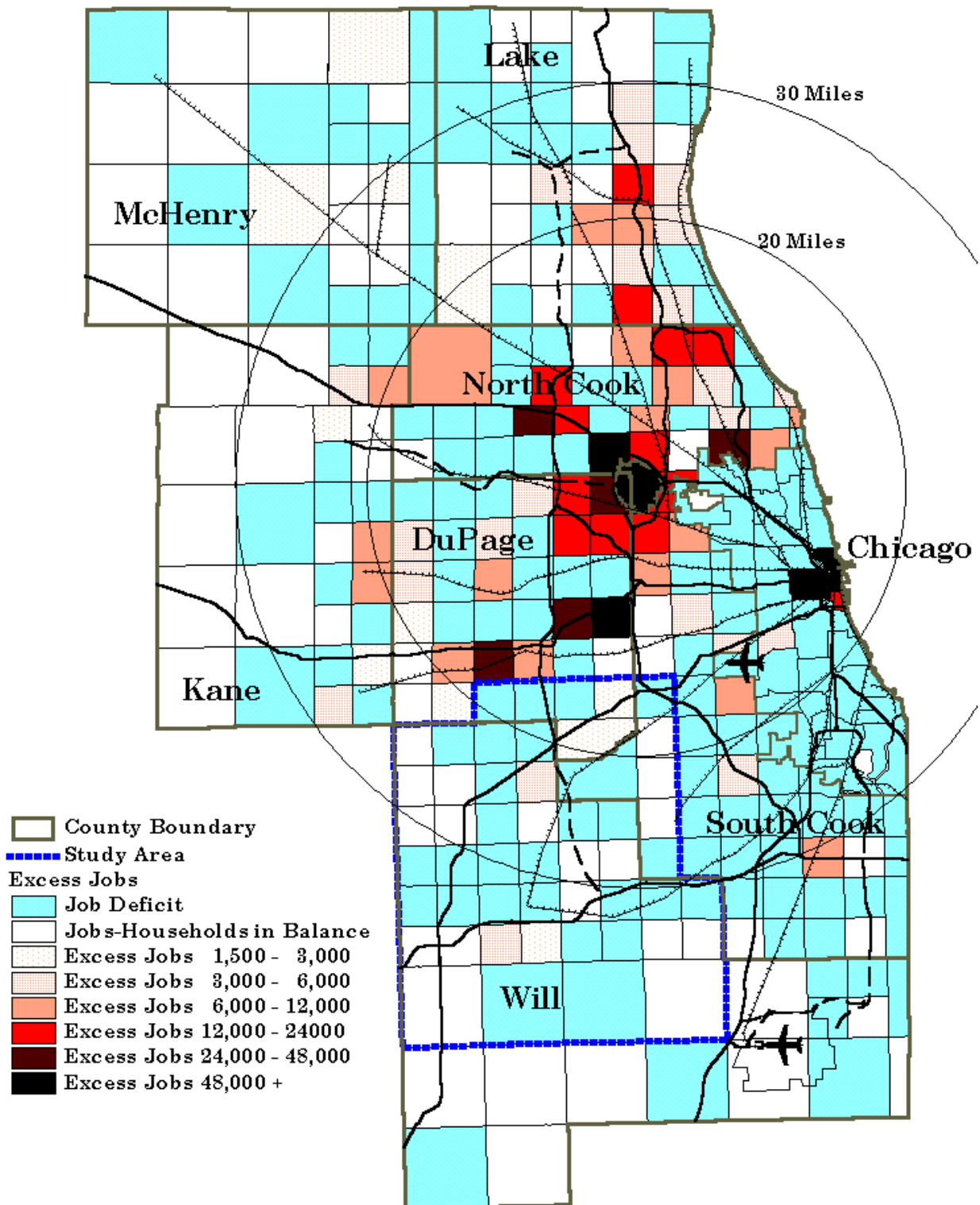


Exhibit 17 : Job/Household Balance - 1970

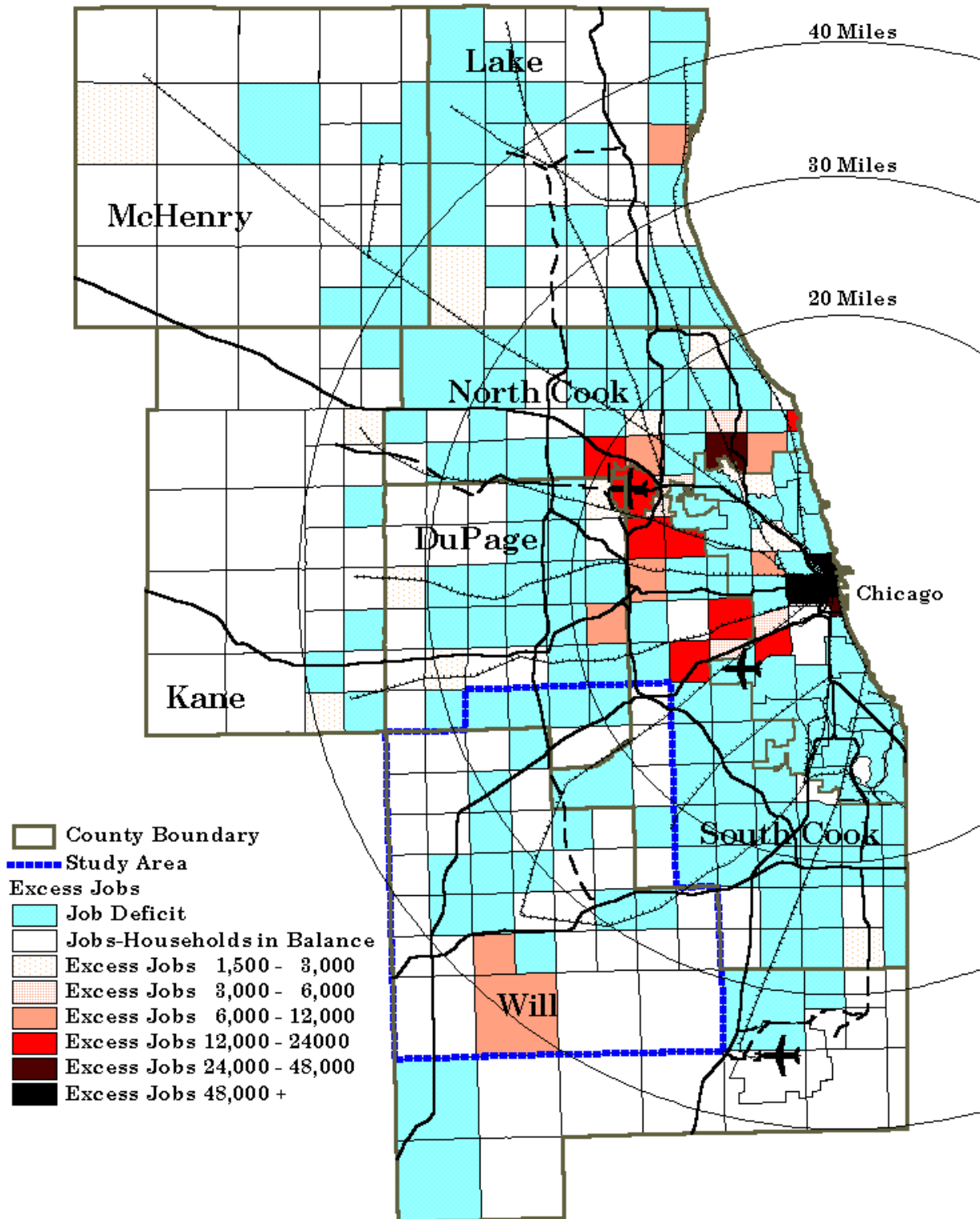


Exhibit 18 : Job/Household Balance - 1980

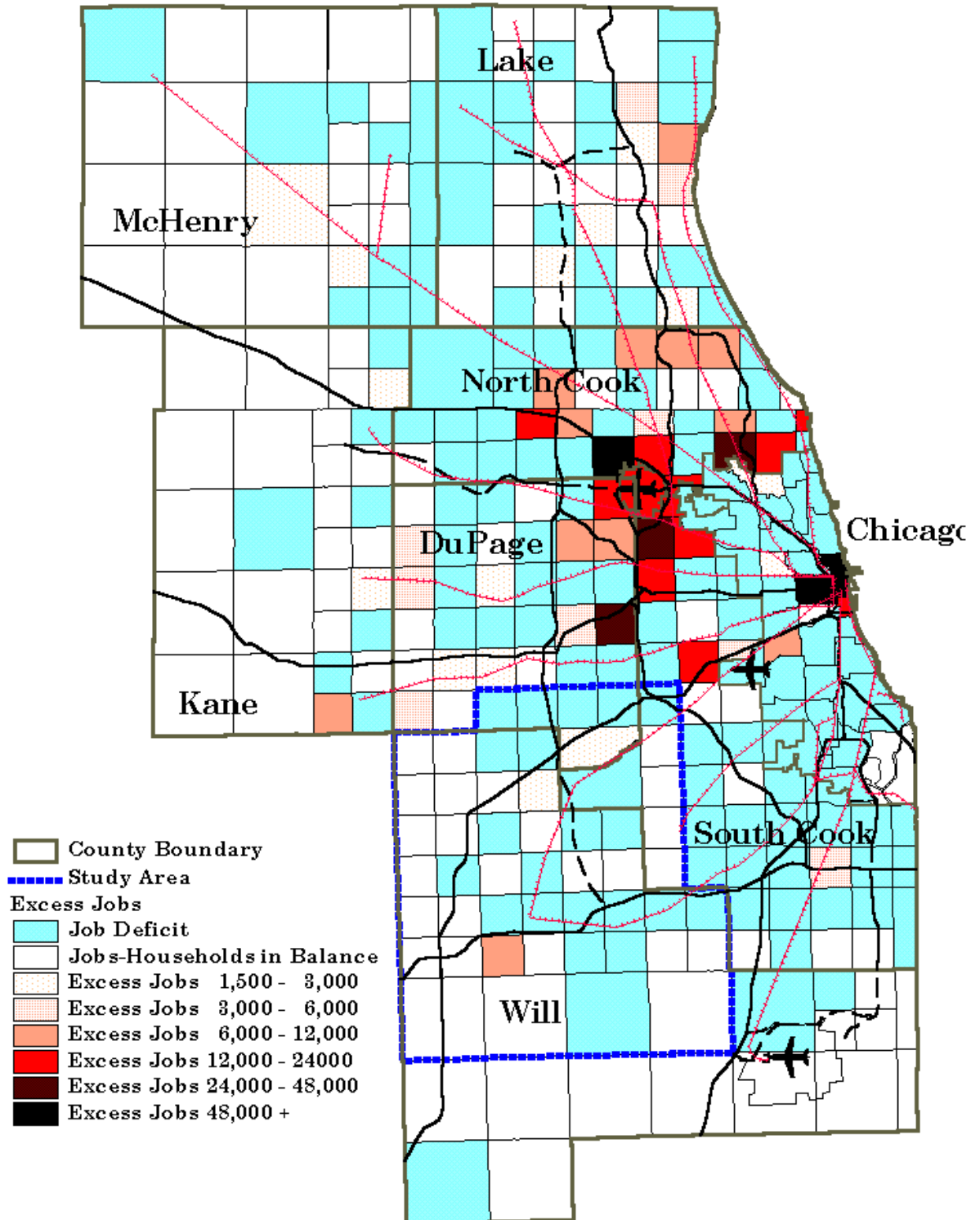


Exhibit 19 : Job/Household Balance - 1990

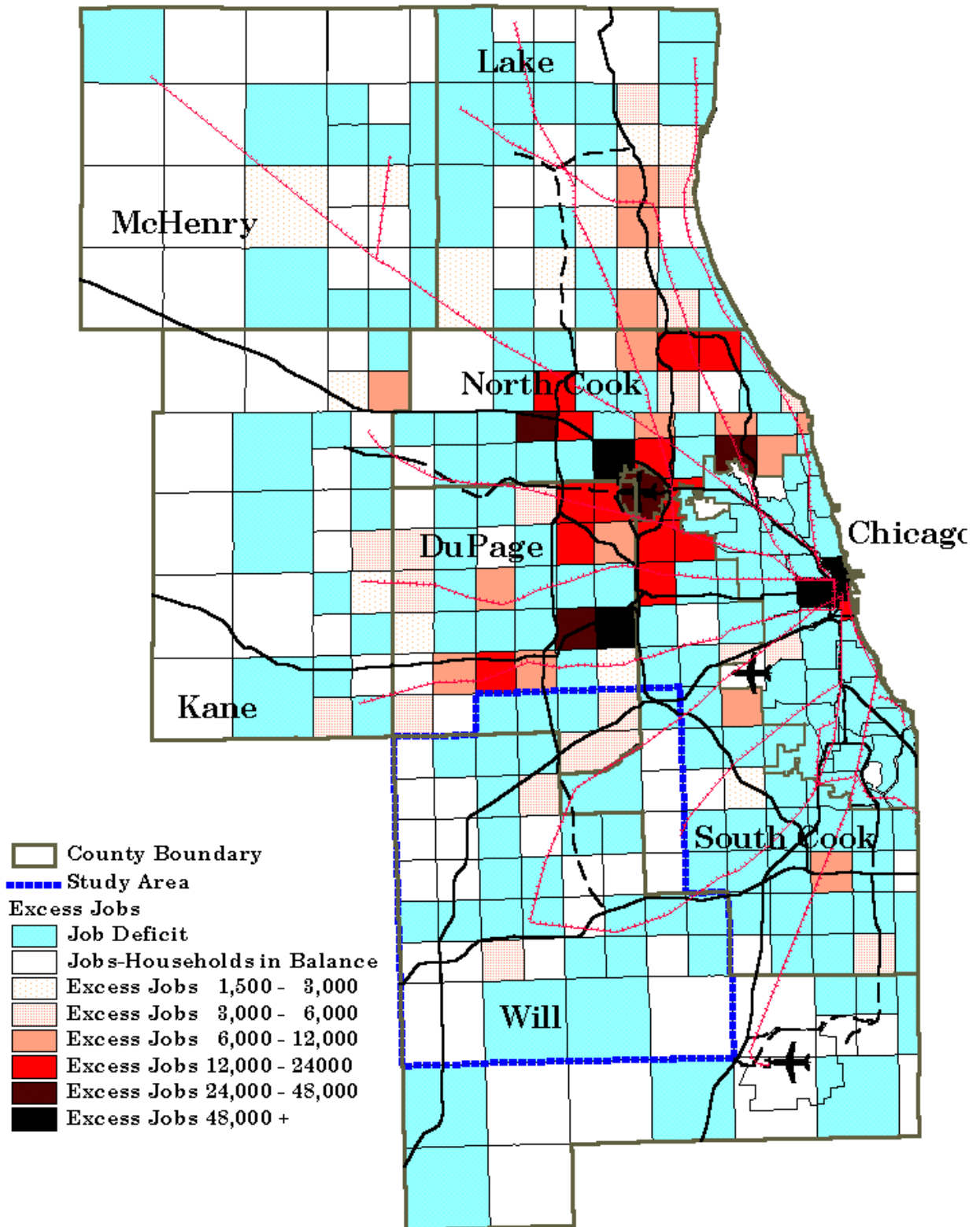
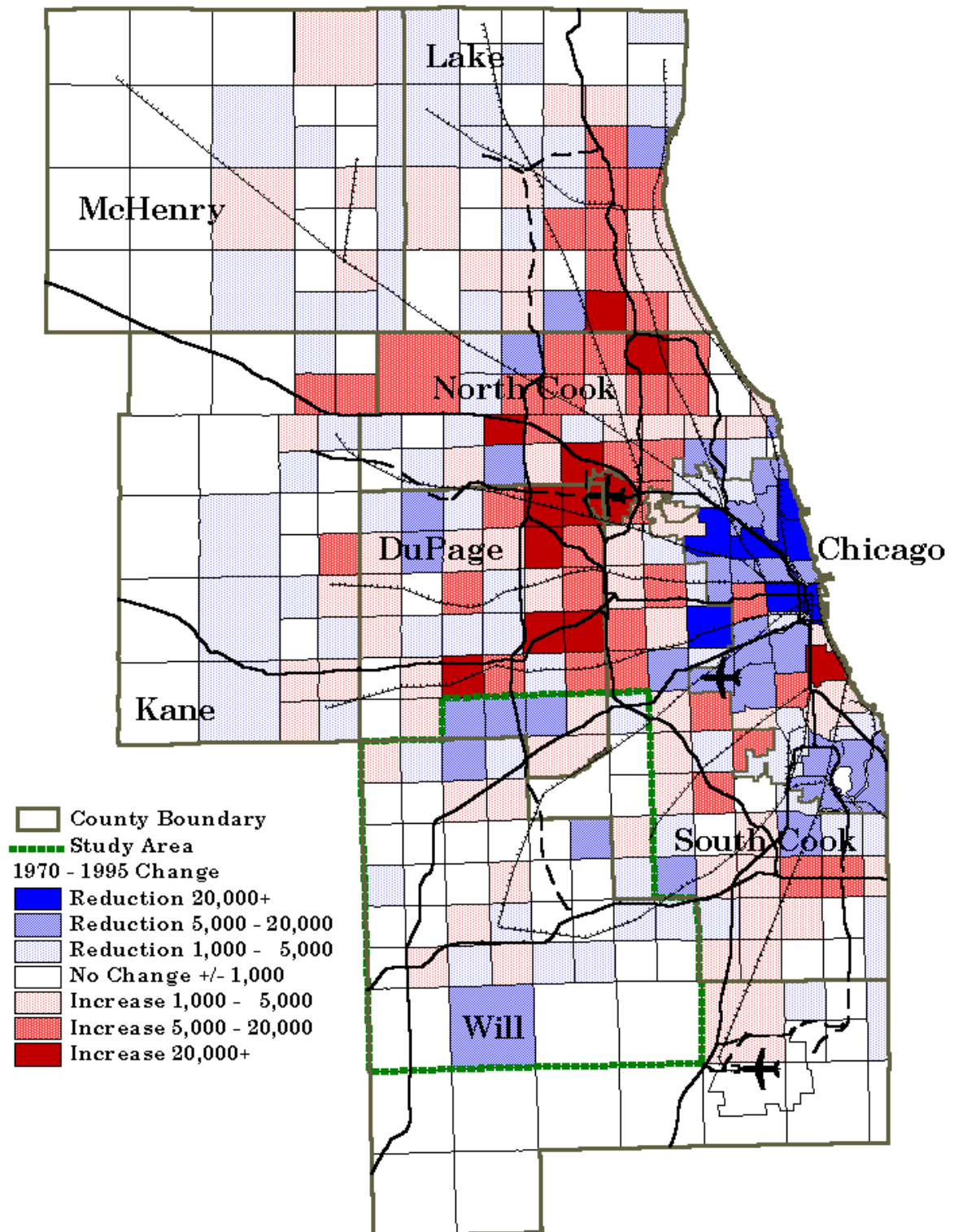


Exhibit 20 : Change In Excess Jobs 1970 - 1995



Prepared by The al Chalabi Group, Ltd.

January 2000

exception was the south-western sector, where the large forest preserves of Cook County were impediments to contiguous development.

By 1995, the region was no longer concentric around downtown Chicago. Much earlier, the growth of the region had begun to be concentric around O'Hare. This is clearly evident in the distribution of jobs (see Exhibit 21). Because commercial and industrial development can out-bid residential uses for scarce land, it had pushed the latter from the inner ring surrounding O'Hare. Urban development leaped beyond the 40-mile ring (from downtown Chicago) in the North, Northwest, and West. This expansion continues to occur, even though there is adequate land for development within the 20-30 mile ring in the South and Southwest sectors of the region.

E. Availability and Suitability of Land for Urban Development

Exhibit 23 shows the 1990 land use distribution by quarter-section (latest year available; NIPC is currently completing the 1995 land use survey). This map is not significantly different from Exhibit 21, except that it differentiates between industrial and commercial land and shows the total areas occupied by institutions, not only their employment, by quarter-section. The most prominent of this latter use is the Joliet Arsenal in Will County. The Arsenal has been decommissioned; it will be reused, in most part, as a national cemetery, national recreation area and a landfill, all open space uses. Two industrial parks also are planned. If these two latter developments materialize, NIPC's forecasts may need to be revised upward. The current skewed development of the Chicago region toward the North, Northwest and West sectors of the region, however, is evident from this map.

Exhibit 24 is the reverse image of Exhibit 23. Exhibit 24 shows the land available for development and public open space, including:

- Vacant land
- Agricultural land
- Water and wetlands

Good planning practices dictate that it is desirable to develop vacant land, first. However, such lands in the Chicago region are limited, tend to be small in area, and are scattered (as evidenced in Exhibit 24). In some cases, especially within the urban core, these vacant sites require considerable environmental cleanup before they are suitable for redevelopment. Notwithstanding these problems, most of the major vacant parcels of land, north of the Stevenson Expressway and within 30 miles of downtown Chicago, either have been developed or are in the process of being developed. South of the Stevenson, developments are more difficult to attract. Basic jobs require good access to airports and other job centers; residential developments require good access to basic jobs. South of I-55, these inducements are lacking.

The total vacant land, including the smallest parcels, with 30 miles of downtown Chicago comprises 115 square miles. Of this, 70 square miles or 5 percent of total land, represents the minimum desirable vacant land, within completely built-up areas, to allow for redevelopment, renovation and modest expansion. Given this factor, only 45 square miles are truly available for urban re-use today; and most of this land (35 square miles) is south of I-55.

Given the currently-adopted household and employment forecasts of NIPC for Northeastern Illinois, and assuming the current average regional densities (including those for the City of Chicago), we can expect 500 to 600 square miles of land to be developed between 1990 and 2020. The existing vacant land within 30 miles of the center of Chicago is woefully inadequate (comprising less than 10 percent) to accommodate this demand. Accordingly, agricultural lands will continue to be converted to urban uses. The question then is, “which are the best areas to urbanize and what guidelines should be applied to their development?”

F. Guiding Urban Development and the Impact of I-355 Extension

The Illinois Department of Transportation (IDOT) is cognizant of the impact of transportation facilities on urban development. However, IDOT must rely on regional and local agencies to determine the policies for directing development. IDOT also utilizes these growth policies in evaluating the environmental impacts of its projects.

The Northeastern Illinois Planning Commission (NIPC) is the regional agency responsible for coordinating the growth of the six Northwestern Illinois Counties: Cook, DuPage, Kane, Lake, McHenry and Will. The NIPC forecasting model provides the basis for determining the impact of transportation facilities on urban development. The NIPC forecasting model considers both Commission-adopted policies and market forces in generating the Commission’s socio-economic and land-use forecasts. Transportation facilities do change the market pressures for developing various areas of the region. The question then is, “are developments that are induced, or encouraged, by the construction of the I-355 Extension South, desirable; or are then in conflict with the adopted regional growth strategies?” The NIPC development strategies include:

- Encouraging development in areas served by public transportation, including commuter rail.
- Encouraging development in areas served by existing infrastructure and contiguous with existing development; this policy discourages development which leap-frogs into agricultural land. It is recognized that conversion of major parcels of agricultural land is inevitable given the scarcity of vacant land within the urban core and built-up areas of the metropolis.

- Protecting flood plains, wetlands and other environmentally-sensitive areas from development.

The market forces recognized by the NIPC growth model include:

- Proximity to the focal points (or catalysts) of development; two are recognized. They are: the Chicago Central Area; and major commercial airports weighted by the aviation activity of each.
- Proximity of job centers and labor force. The first is important for attracting residential development; the second, for attracting jobs. The relationship is cyclical.
- Proximity to other factors influencing development - e.g. schools, shopping, recreational facilities, etc.

Review of Exhibit 24 shows that the agricultural and vacant land in the vicinity of the I-355 Extension represents the only major land available for development within 30 miles of the Chicago Central Area. And, fully two-thirds of the I-355 Extension Study Area is available for development. As stated earlier, the reasons for development bypassing this area, to date, included the shift of the regional center from the Chicago Central Area to O'Hare, and the existence of major Cook County Forest Preserves as impediments to contiguous development radiating outward from the Chicago Central Area.

Exhibit 25 shows the Land Not in Urban Uses within the 20 and 30-mile radius from O'Hare Airport. In 1990, there were few agricultural or vacant land parcels within 20 miles of O'Hare; most of this land in far Western DuPage and Northwest Cook have already been developed. The lands available for development in the 20-30 mile ring from O'Hare and located in the North and Northwestern portion of the region have a high concentration of wetlands. The available lands in the vicinity of the I-355 Extension have a lower concentration of wetlands and are located between two rail facilities and are just west of the terminus of a third. In addition, this land is the only major concentration of developable land remaining in the 20-30 mile ring of the Chicago Central Area.

G. Conclusions

The area in the vicinity of the I-355 Extension is highly-suitable for development, given the policy guidelines established by NIPC. There are strong market forces acting on this area, in terms of proximity to O'Hare's extended development; the job concentrations in DuPage County and the Chicago Central Area; and the mature, high density development of the region. Given these factors, this area will develop, with or without the I-355 Extension, primarily for residential. It is for this reason, that the

differences in population and employment forecasts that result from analyses with or without the I-355 Extension are minimal. However, the construction of the I-355 Extension would allow for higher-density development in the vicinity of the facility, thus attracting growth that would otherwise occur to the west of I-55, an area farther out from the regional core.

Finally, the area south of I-55 has one of the highest concentrations of low-income households and minorities in the region. This composition is likely to continue for some time. Its advantage, however, is that commensurate low-and moderate-income housing also exist in this highly-diverse area. The I-355 Extension South would provide better access to the job-rich and job-expanding areas of O'Hare, DuPage, and Northwest Cook Counties. If appropriate job training and reasonable commute times can be provided, the access to jobs provided by I-355 can return increased income to the households and increased revenues to the communities of the South and Southwest Suburbs.

As has been discussed earlier, the officially-adopted Regional Transportation Plan recognizes two development scenarios for the Chicago region for 2020. These are:

- Existing Airports Scenario
- South Suburban Airport Scenario

Because it was determined that the Existing Airports Scenario represents the worse case for justifying the I-355 Extension, it is the scenario employed throughout the analysis. However, the two alternatives have very different overall impacts on the South portion of the region.

With the South Suburban Airport in place, a substantial and growing employment center will be serving the region, making access from the Study Area to the existing O'Hare and DuPage County job resources less critical. However, traffic demands on the facility will increase greatly to service both the South Suburban Airport and its jobs. These differing developments and demands are shown on the following four exhibits, 26, 27, 28, 29 which show job/household balance under the following four assumptions:

- All RTP Projects - Existing Airports
- No-RTP Projects - Existing Airports
- All RTP Projects - South Suburban Airport
- No-RTP Projects - South Suburban Airport

The analysis of these four alternatives re-emphasizes the findings that the impact of the I-355 Extension and all other RTP projects on distribution of jobs and households will not be significant. The same approach and techniques, when applied to the two airport scenarios, however, conclude that the socio-economic impact differences between them are very significant, even when holding regional totals constant.

Exhibit 21 : Job/Household Balance - 1995 By Quarter Section

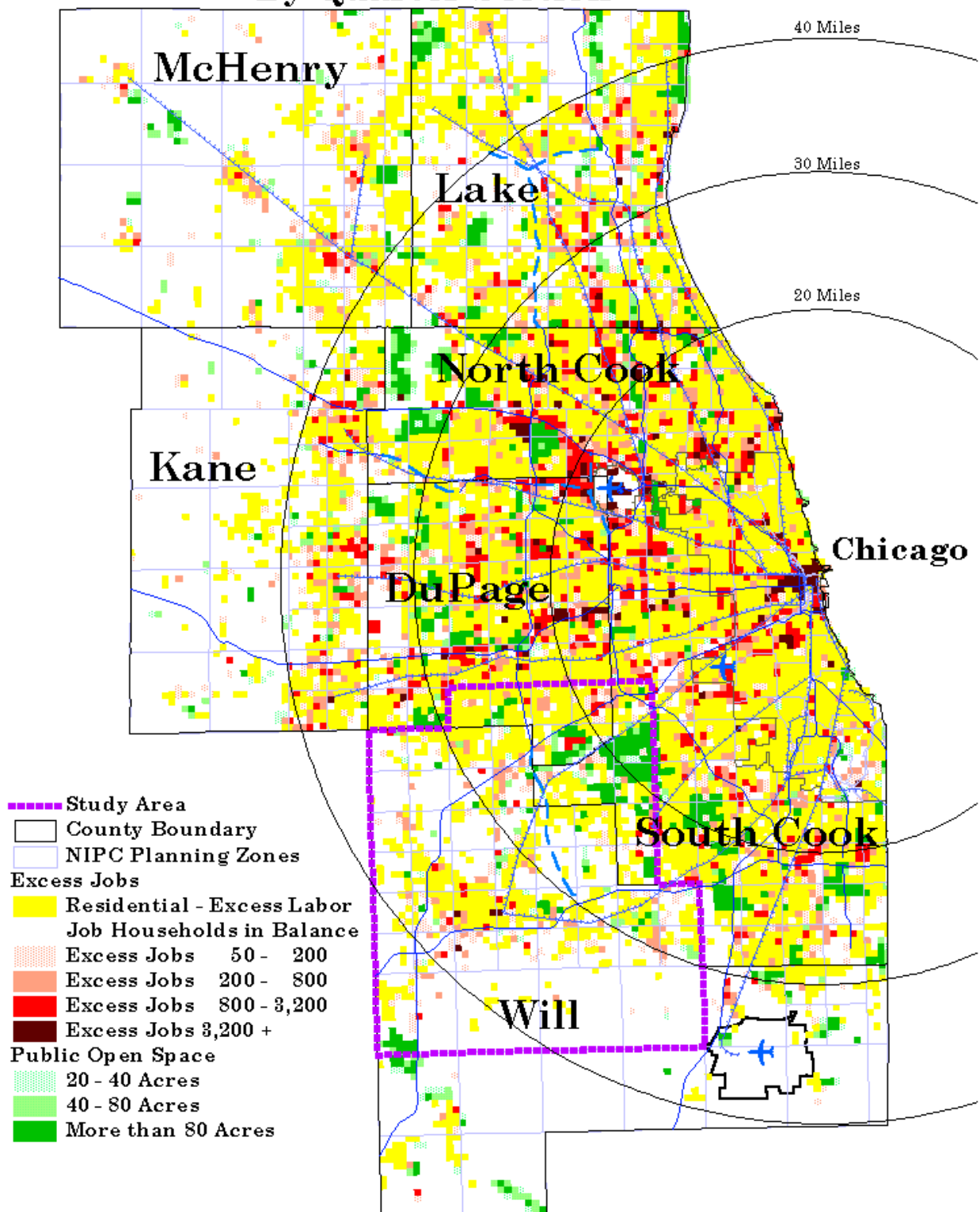


Exhibit 22 : Job/Household Balance - 1970 By Quarter Section

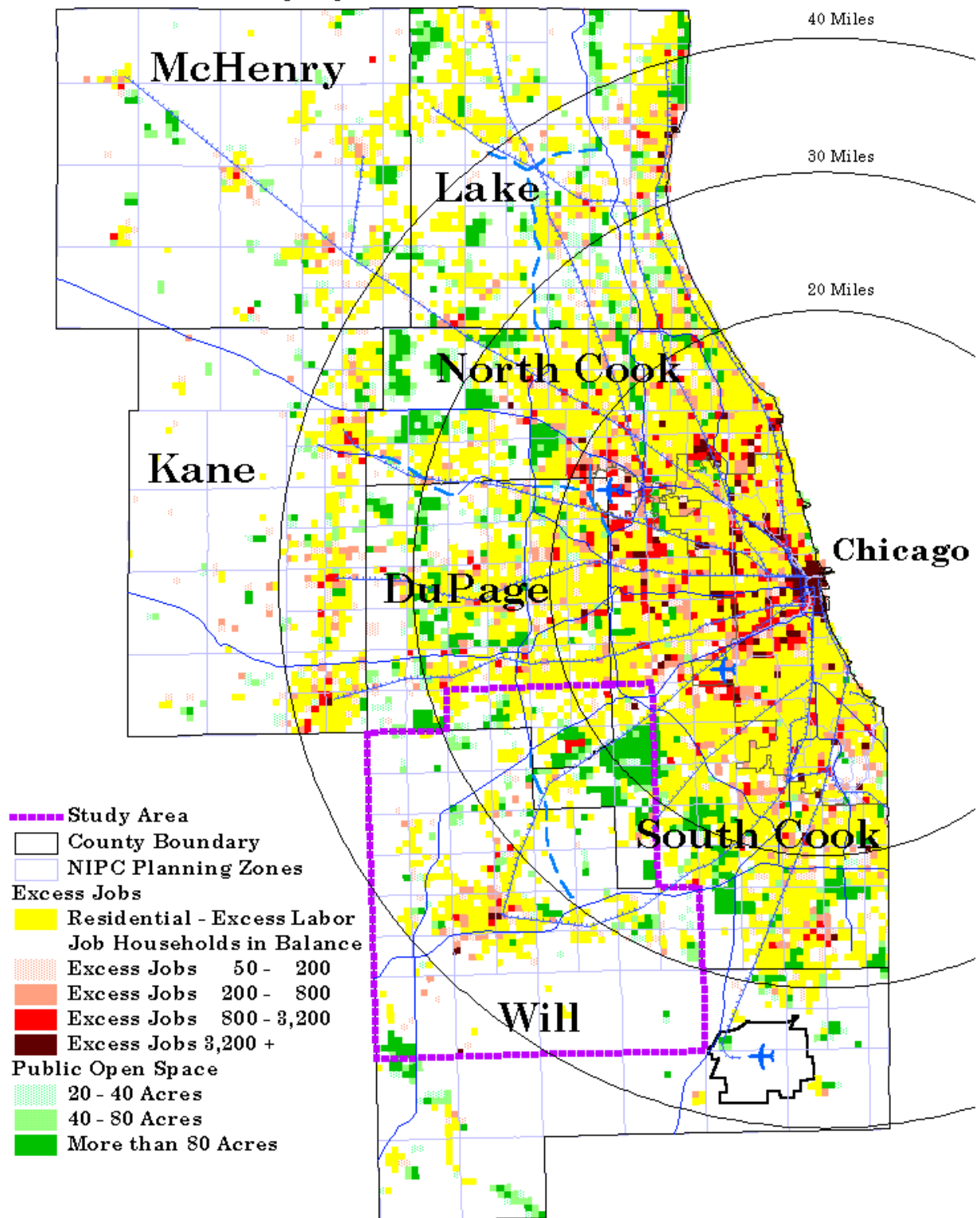


Exhibit 23 : Land In Urban Uses Including Public Open Space - 1990

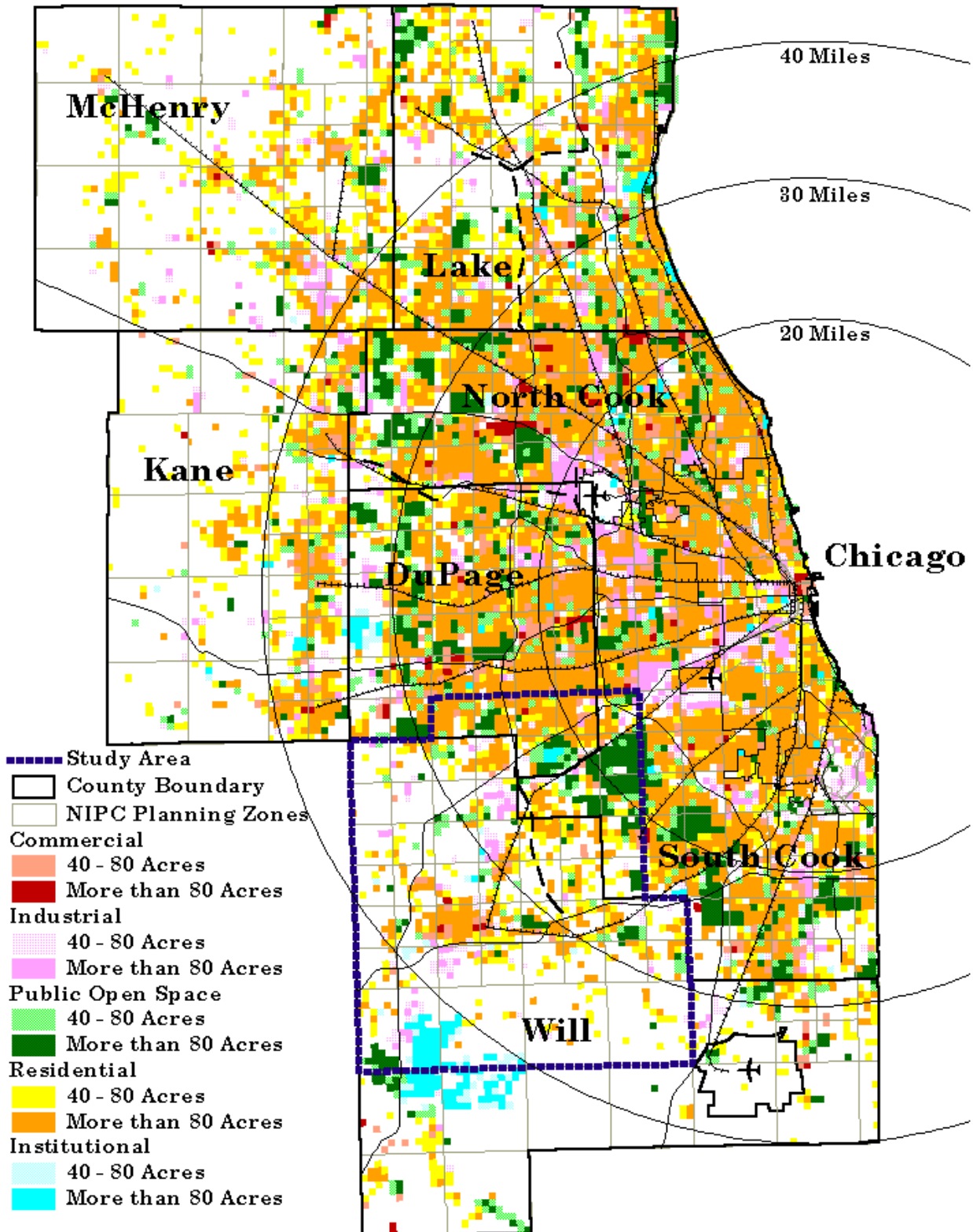
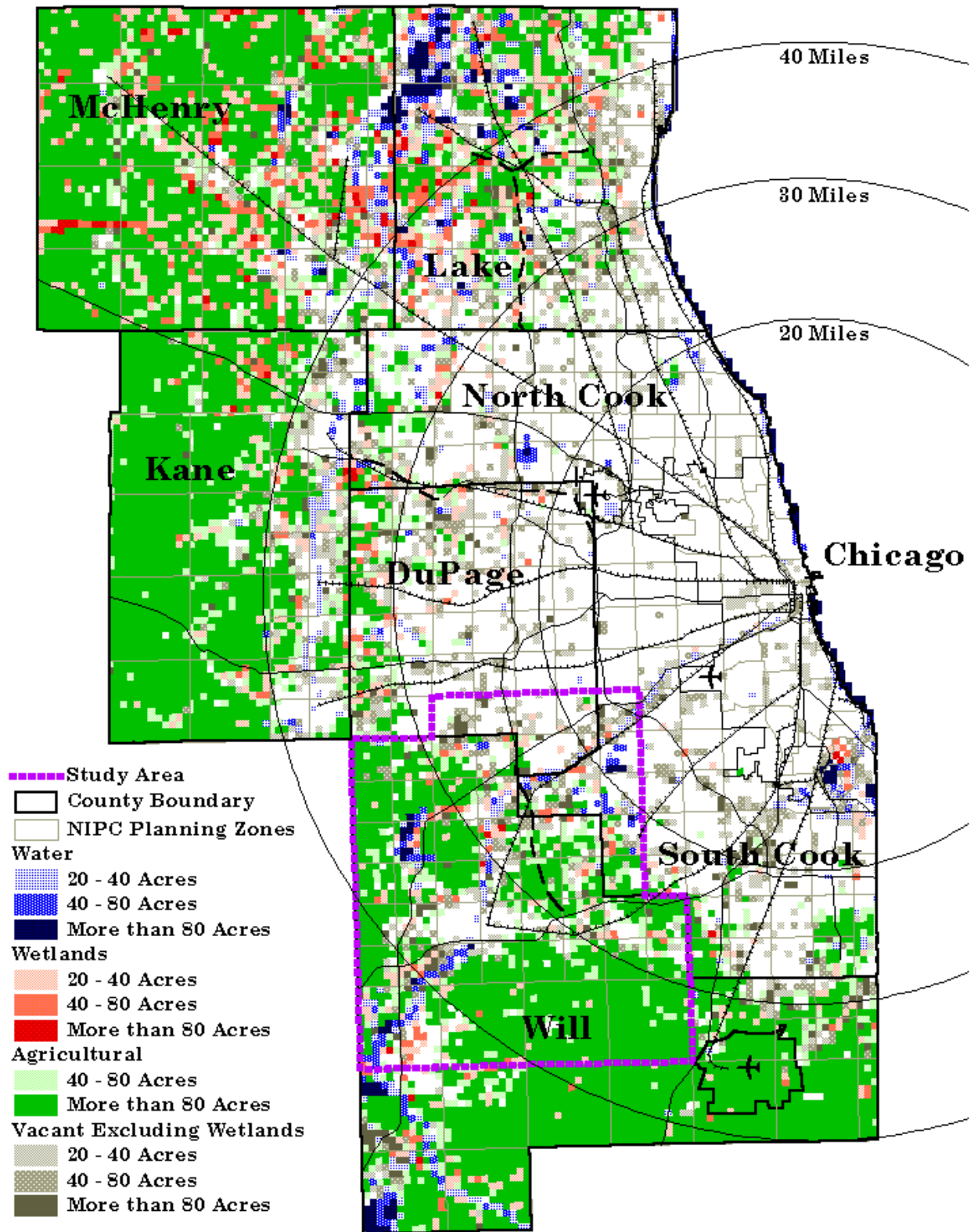
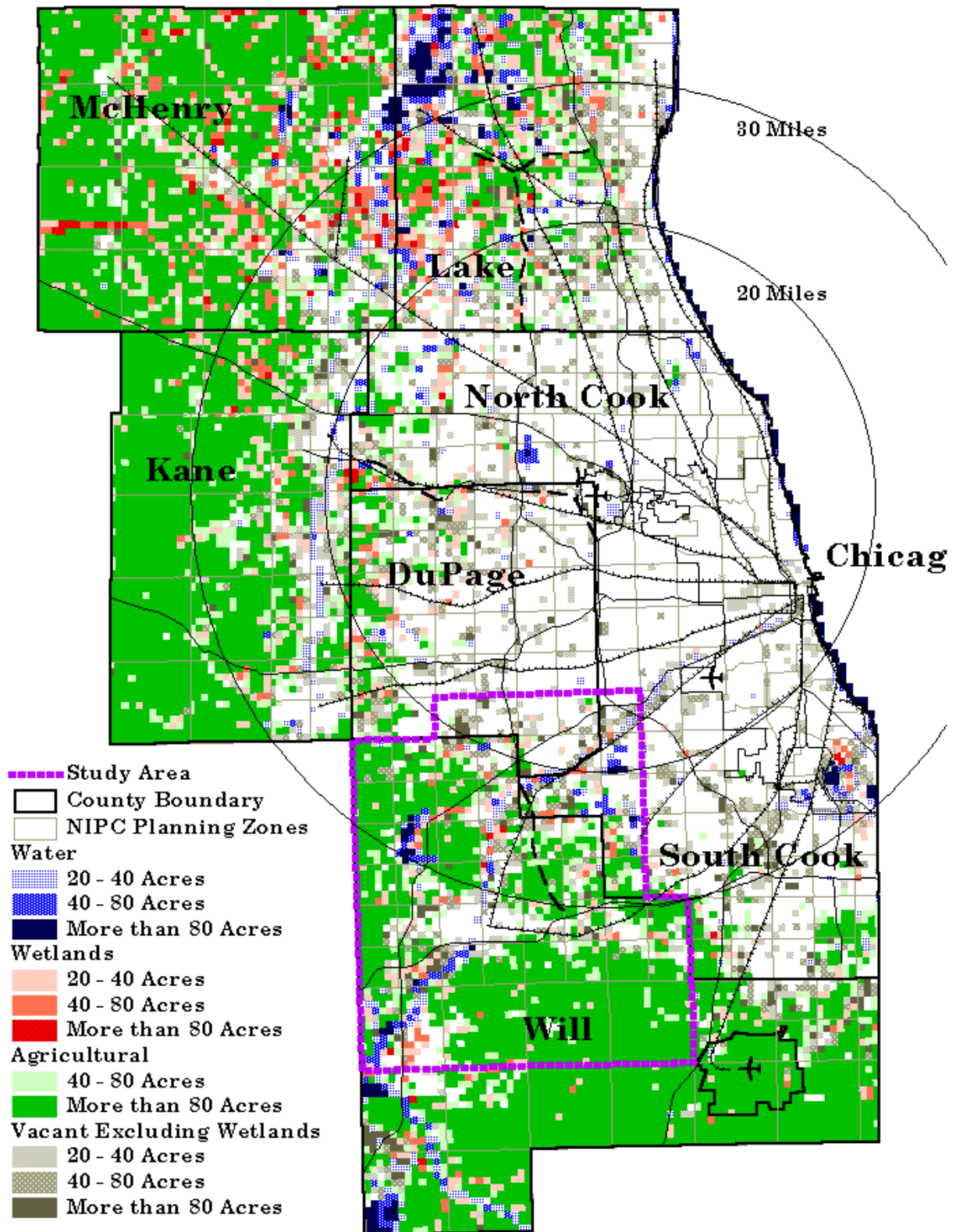


Exhibit 24 : Land Not In Urban Uses
Agriculture, Vacant and Wetlands - 1990
Distances from Chicago Central Area



**Exhibit 25 : Land Not In Urban Uses
Agriculture, Vacant and Wetlands - 1990
Distances from O'Hare Airport**



**Exhibit 26 : Job/Household Balance - 2020
All RTP Projects - Existing Airports Scenario**

